

Solder Temp (°C)	63Sn37Pb	96.3Sn/0.7Cu	96.5Sn/3.5Ag	ALLOY 349	Wetting Time (Sec)				
					Vermet 217	Vermet 411	Vermet 513	96.5Sn/4.0Ag/0.5Cu	96.5Sn/2.5Ag/1.0Bi/0.5Cu
235	0.767	1.411	2.188	1.195	0.949	1.026	1.758	3.333	1.185
245	0.935	1.034	1.352	0.716	0.791	0.659	1.072	1.946	1.235
255	0.946	0.882	1.105	0.544	0.559	0.557	0.822	1.204	0.824
265	0.46	0.165	0.74	0.244	0.475	0.468	0.597	1.048	0.693

FIGURE 1

Wetting time with different temperature

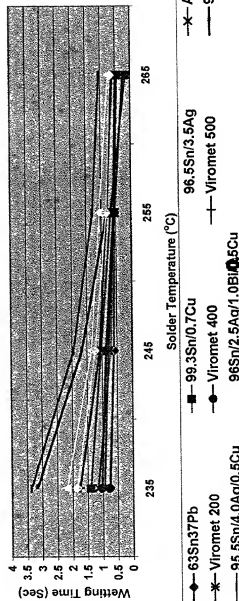


FIGURE 2

Solder Temp (°C)	Maximum wetting force at 2.0s (mN)									
	63Sn37Pb	92.5Sn7.5Cu	96.5Sn3.5Ag	ALLOY 349	Vironet 217	Vironet 411	Vironet 513	96.5Sn3.5Ag3.0Bi	96.5Sn4.0Ag0.5Cu	96.5Sn2.5Ag1.0Bi0.5Cu
235	5.48	4.37	2.54	3.21	5.38	3.25	1.27	1.03	1.07	3.47
245	5.54	4.83	4.74	4.82	5.67	3.65	3.94	3.91	3.13	4.8
255	5.42	5.4	5.16	4.9	5.76	4.55	3.98	4.95	4.85	5.48
265	5.61	5.77	5.34	5.07	5.49	4.89	4.67	5.37	4.73	5.49

FIGURE 3

Maximum wetting force at 2.0s

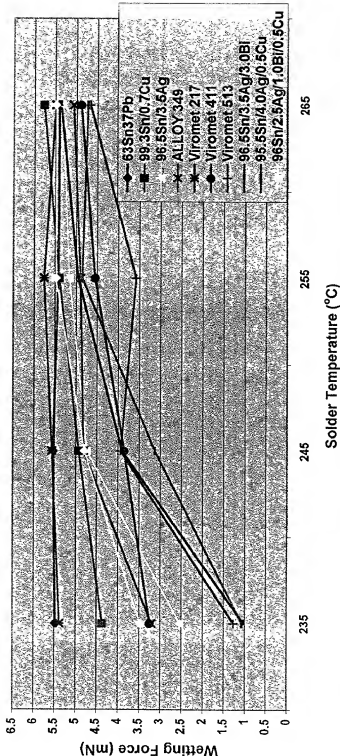


FIGURE 4

Properties	Type of alloys									
	63Sn/37Pb	63.3Sn/36.7Cu	63.5Sn/36.5Ag	Microal 217	ALLOY 349	Microal HF	63.5Sn/36.5Ag/2Bi	63.5Sn/40.5Ag/0.5Bi	63Sn/2.5Ag/0.5Bi	95Sn/5Ag/0.5Bi
Melting Temp.(°C)	183	227	221	193-209	205-210	203-215	195-215	194-218	194-218	195-218
CTE(um/m°C)	23.3	19.3	22.7	22.5	22.9	18.6	23.1	21.5	14.5	14.5
SG(g/cm³)	8.4	7.31	7.38	7.34	7.4	7.3	7.22	7.4	7.4	7.38

Figure 5

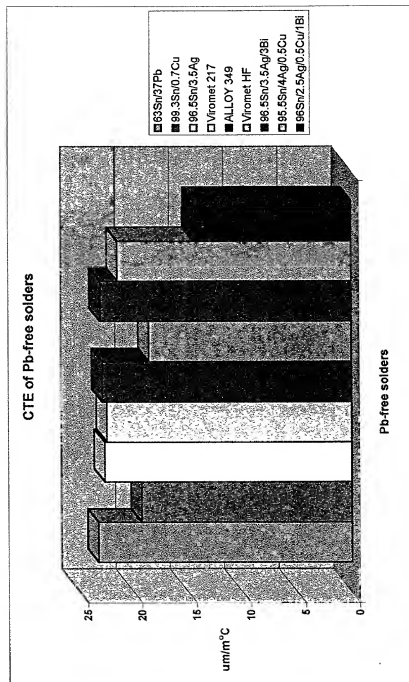


Figure 6



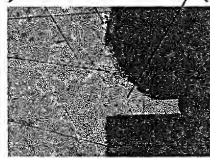
FIGURE 9

Type of Solder	Method of Soldering	Plating of Board	Type of Component	No. of lifted points	Total no of points	% of Occurrence
Viromet 217 J	Wave 245/1.0	Au	Diodes	24	24	100
			Resistors 1	29	32	91
			Resistors 2	27	36	75
	Wave 255/1.0	Au	Diodes	19	20	95
			Resistors 1	37	40	92.5
			Connector	40	40	100
	Dip	Au HASL	Jumpers	22	32	69
Sn/3.2Ag/0.5Bi/4In	Dip	HASL	Jumpers	16	24	66.7
Sn/3.2Ag/1Bi/6In	Dip	HASL	Jumpers	18	24	75
Sn/3.2Ag/2Bi/6In	Dip	HASL	Jumpers	14	20	70
ALLOY 349	Dip	OSP	Connector 1	0	6	0
			Resistor	0	22	0
	Dip	Au	Resistor	0	20	0
			Diodes		16	0
Sn/4Ag/0.5Cu/1Bi	Dip	HASL	Jumpers	15	24	62.5
Sn/Ag	Dip	HASL	Jumpers	5	28	17.9



Ni/Au coating

FIGURE 10A



OSP Coating

FIGURE 10B



00932793-001701

Type of Solder	Conc of copper (%) by weight)	Dissolution rate of copper
Viromet 349	0.06312	0.0118406
Viromet 217	0.05506	0.0112433
Sn/Cu0.7	0.16017	0.0320858
Sn/Ag/Cu	0.13221	0.0264772
Sn63/Pb37	0.02279	0.0045627

FIGURE 11

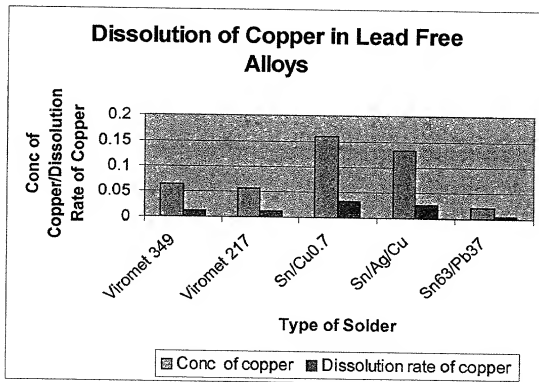


FIGURE 12

Solder Alloy	1	2	3	4	Total (g/h)
Sn63/37	6.55	6.80	7.05	6.80	27.2
Viromet 217	3.8	5.50	5.60	6.90	21.80
Viromet 349	7.20	6.41	5.45	5.88	24.94
Sn/Cu0.7	10.36	10.71	10.70	10.10	41.87
Sn/Ag/Cu	13.95	10.95	10.50	12.85	48.06

FIGURE 13